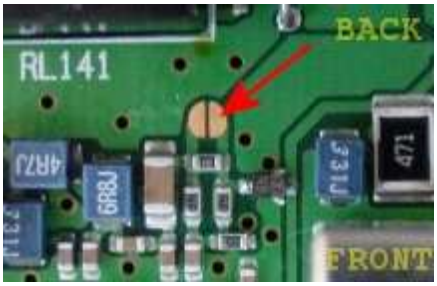
Pete's Advanced MW Attenuation Removal Mod
VERSION 1.0



WARNING: Performing this mod will void your warrantee and could **destroy** your radio.
WARNING: DO NOT perform this mod without some type of **eye protection**.
CAUTION: This mod takes soldering skill so please practice beforehand.
DISCLAIMER: The author is not responsible for any damage resulting from this mod.

1. Abstract:

This is a description of Pete Gianakopoulos' MW attenuator bypass mod.

2. Introduction:

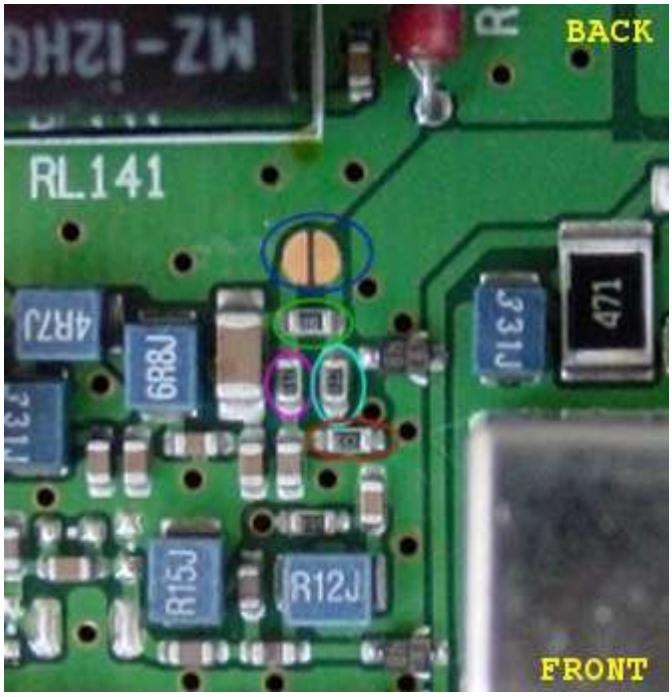
The stock R75 is attenuated by 10 dB on LW and MW. Pete found that shorting the MW attenuator pads (see red arrow in picture above) resulted in only a 2 to 3 dB increase in sensitivity. Pete subsequently created a working MW attenuator bypass mod that he describes below:

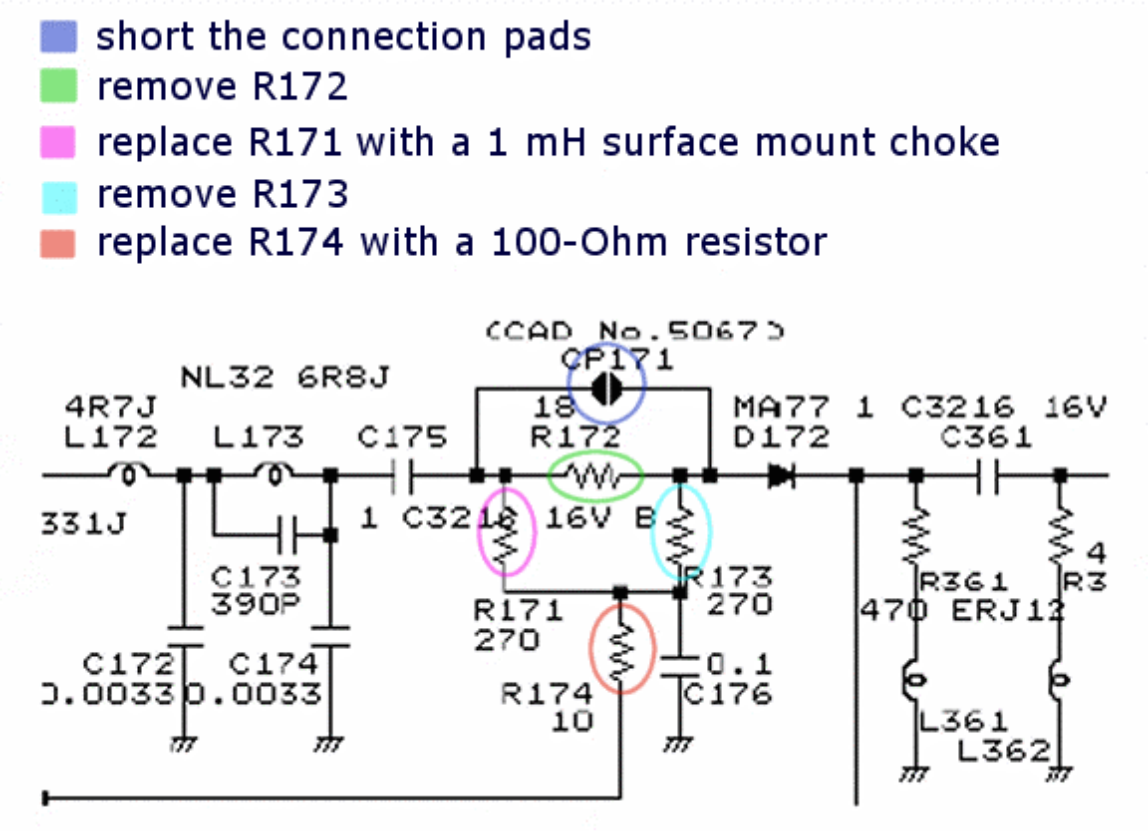
"It seems that 100 Ohm current limiting resistors are used as the series Rs with the switching diodes in the front end. In an earlier post, I mentioned that the shunt Rs in the MW attenuator were providing the return path for the switching diode in the front end. I calculated the equivalent resistance of this network to be 139 Ohms; that is the reason that I specified the 2.2 mH choke in series with the 110-Ohm resistor. Anyway, I did change the 10-Ohm series resistor that ICOM has in their unit to the 100-Ohm unit that is used in all of the other filter ranges; this eliminates the need for the extra resistor that is in series with the 2.2 mH choke. I didn't like the fact that the 2.2 mH choke is self-resonant at around 900 kHz, so I switched that value to a 1 mH Murata surface mount inductor. It may be because I eliminated some of the parasitics that were present with the 2.2 mH choke, but the sensitivity on the LW band improved. The 0.1 uV spec is now maintained down to 150 kHz, degrading to 0.2 uV at 100 kHz. This is because of the noise floor rise at 100 kHz and below, maybe due to the close-in phase noise of the synthesizer."

3. Methods:

Pete describes how to perform the modification as follows:

"To remove the MW attenuator, remove R171 and R173 (270 Ohms), and replace R172 (18 Ohms) with either a zero Ohm resistor short that connection point pad that is supposed to bypass the attenuator (it really does not, unless you remove R171 and R173). Next, change R174 (10 Ohms) to a 100-Ohm resistor. Finally, add a 1 mH surface mount choke across the point where R171 was connected. This is to provide the DC return path for the switching diode. You could use a leaded choke, but the main thing is to keep the leads as short as possible. On a final note, I must caution anybody that these parts are relatively small; we are talking about 0603 (.06 by .03 inch) parts. You really need to have some sort of magnifier or stereomicroscope or close up reading glasses to do this job. Also, you need a good soldering iron with a small tip, such as a Pace, Metcal, or Hayco soldering station to do the job. The reason for this is that you need to be able to concentrate the heat in a very small area. If anybody has any questions, feel free to give me a shout, and I will walk you through the job."





4. Credits:

Pete Gianakopoulos of Chicago, Illinois created this modification.

[EOF]